

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Proposed Action: Approve Drilling Permit (Form 22)

Operator: Interstate Explorations, LLC

Well Name/Number: Michels 2-1

Location: NW NE Section 3 T13N R60E

County: Wibaux, **MT;** **Field (or Wildcat)** Black Diamond

Air Quality

(possible concerns)

Long drilling time: 20-25 days drilling time for a Vertical Lodgepole Formation test.

Unusually deep drilling (high horsepower rig): No, large triple drilling rig for a 12,000' MD /12,000 TVD test.

Possible H₂S gas production: Possible, H₂S gas from Mississippian Formations.

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns, adequate surface casing, 2000' to be set and cemented back to surface, Rule 36.22.1001. Proper BOP stack should mitigate any concerns (5000 psig Double ram and annular preventer), Rule 36.22.1014. If well is successful and there are existing pipelines for natural gas in the area. Then associated gas must be tied into gathering system or if no gathering system nearby limited quantities of associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Use freshwater and freshwater mud system on surface hole, Rule 36.22.1001. Invert oil based mud for mainhole from the base of surface casing to TD.

High water table: No high water table expected.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary to Brophy Creek 1/5 of a mile to the south. Brophy Creek is about 2/5 of a mile to the southwest. A stock pond exists 3/5 of a mile to the southwest from this location

Water well contamination: No, closest water wells are between 60' and 1,086' deep, 1.3 miles to the southeast, 1.2 miles to the northeast, 7/10 of a mile to the northwest, and about a mile to the northwest. Surface hole will be drilled with freshwater and steel surface casing set and cemented from 2000' to protect surface waters and the Fox Hill aquifer, Rule 36.22.1001.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No, Class I stream drainages in the area.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

- ☐ Closed mud system
- ☐ Off-site disposal of solids/liquids (in approved facility)
- ☐ Other: _____

Comments: 2000' of surface casing cemented to surface adequate to protect freshwater zones, Rule 36.22.1001. Also, fresh water mud systems to be used on surface hole, Rule 36.22.1001.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No stream crossings anticipated.

High erosion potential: No – cut/fill, maximum 13' cut with 6.6' fill.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: Large, 430'X400' location size required.

Damage to improvements: Slight, surface use is cultivated land.

Conflict with existing land use/values: Slight.

Mitigation

- ☐ Avoid improvements (topographic tolerance)
- ☐ Exception location requested
- ☒ Stockpile topsoil
- ☐ Stream Crossing Permit (other agency review)
- ☒ Reclaim unused part of wellsite if productive
- ☐ Special construction methods to enhance reclamation
- ☐ Other: _____

Comments: Access will be over existing Black Diamond Road and will build about 968' of new access road to this location. Pits will be lined with a synthetic 16 mil pit liner. Invert based oil drilling fluid will be recycled. Completion fluids will be hauled to a permitted commercial Class II disposal. Solids will be allowed to dry in the lined reserve pit and then backfilled. No special concerns

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Nearest residence is 1.1 miles to the southwest and 1.3 miles to the southeast. About 6.4 miles to the northwest is the town of Wibaux, Montana.

Possibility of H2S: Yes small amounts of H2S possible from the Mississippian Formations.

Size of rig/length of drilling time: Triple drilling rig 20 to 25 days drilling time.

Mitigation:

- ☒ Proper BOP equipment
- ☐ Topographic sound barriers
- ☐ H2S contingency and/or evacuation plan
- ☐ Special equipment/procedures requirements
- ☒ Other: Standard for the area H2S safety equipment and training for rig crews.

Comments: No concerns. Proper BOP stack (5,000 psig double ram and annular prevent, Rule 36.22.1014) and adequate surface casing should be able to

control any problems that occur. Distance to nearest residence and H2S safety plan sufficient to mitigate any concerns for H2S.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern and Whooping Crane and 4 species of concern-Hoary Bat, Loggerhead Shrike, Iowa Darter and Sauger. NH tracker lists four (4) potential species of concern: Silver-haired Bat, Brook Stickleback, Brassy Minnow, Creek Chub. Candidate species are the Greater Sage-Grouse, and Sprague's Pipit.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: _____

Comments The surface ownership is private land. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified

Mitigation

☐ avoidance (topographic tolerance, location exception)

☐ other agency review (SHPO, DSL, federal agencies)

☐ Other: _____

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Social/Economic

(possible concerns)

☐ Substantial effect on tax base

☐ Create demand for new governmental services

☐ Population increase or relocation

Comments: Black Diamond Field. No concerns.

Remarks or Special Concerns for this site

Well is a vertical Lodgepole Formation test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC) John Gizicki
(title:) Compliance Specialist
Date: April 9, 2014

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)
Area water wells
(subject discussed)
April 9, 2014 (date)

MT Cadastral website
(Name and Agency)
Aerial Photo, topo map, ownership
(subject discussed)
April 9, 2014
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Species of concern, special status and potential species of concern
(subject discussed)
April 9, 2014
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____